

Appl. No. 10/603,977  
Docket No. 8982C&  
Amdt. dated August 7, 2006  
Reply to Office Action mailed on July 6, 2006  
Customer No. 27752

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### AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1. (original) A hair styling device for smoothing and straightening hair strands on a scalp region, comprising, in combination:
  - a) two hingedly attached, movably opposed arms each of said arms comprising a hair strand gripping means;
  - b) heating means incorporated into the gripping means for providing heat to the hair strands;
  - c) a reservoir in fluid communication with a means of delivery of the gripping means which delivers a nonvolatile styling active delivered as droplets having a Dv(90) of less than about 30 microns.
2. (original) A hair styling device according to Claim 1 wherein the reservoir additionally is comprised of water delivered to the hair.
3. (original) A hair styling device according to Claim 2 wherein about 0.02 to about 4 grams per minute of water is delivered to the hair.
4. (original) A hair styling device according to Claim 1 wherein the hair styling device further comprises a second reservoir.
5. (original) A hair styling device according to Claim 4 wherein the second reservoir comprises water.
6. (original) A hair styling device according to Claim 5 wherein about 0.02 to about 4 grams per minute of water is delivered to the hair.

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7. (original) A hair styling device according to Claim 2 wherein the gripping means is comprised of opposing jaws of the device.
8. (original) A hair styling device according to Claim 2 wherein the gripping means comprises of a reservoir for containing the nonvolatile styling active.
9. (original) A hair styling device according to Claim 1 the reservoir is in fluid communication with the hair strands through one or more of the gripping means.
10. (original) A hair styling device according to Claim 1 wherein the reservoir resides in the arms.
11. (original) A hair styling device according to Claim 1 wherein the reservoir comprises a removable pre-filled cartridge.
12. (original) A hair styling device according to Claim 1 wherein the reservoir is refillable through a first exclusive joint.
13. (original) A hair styling device according to Claims 3 or 6 wherein the reservoir is in communication with a means of delivery of the styling active.
14. (original) A hair styling device according to Claim 13 wherein a means of transport connects the reservoir and the means of delivery of the styling active to the hair.
15. (original) A hair styling device according to Claim 14 wherein the means of transport is a material that is capable of wicking the nonvolatile styling active.
16. (original) A hair styling device according to Claim 15 wherein the means of transport is selected from the group consisting of a felt, foam, or a bundle of fibers.

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17. (original) A hair styling device according to Claim 16 wherein the means of transport is a felt.
18. (original) A hair styling device according to Claim 3 wherein the nonvolatile styling active further comprises a carrier.
19. (original) A hair styling device according to Claim 18 wherein the nonvolatile styling active is miscible/dispersible in the carrier.
20. (original) A hair styling device according to Claims 1 or 19 wherein the nonvolatile styling active remains as a liquid or a semisolid after the styling active has been delivered to the hair.
21. (original) A hair styling device according to Claim 19 wherein the means of delivery of the nonvolatile styling active to the hair further comprises a means for vaporizing the carrier resulting in a droplet size having a  $Dv(90)$  of less than about 30 microns.
22. (original) A hair styling device for smoothing and straightening hair strands on a scalp region, comprising, in combination:
  - a) two hingedly attached, movably opposed arms, each arm comprising a hair gripping means, one or both of the gripping means being heatable;
  - b) a means of vaporization comprising a heatable vaporizing plate associated with one or both of the arms, the means of vaporization being in fluid communication with the gripping means;
  - c) reservoir in fluid communication with one or both of the gripping means for containing a nonvolatile styling active and a carrier;
  - d) means, associated with the hair styling device, to transport a styling active from the reservoir to a means of vaporization;
  - e) heating chamber in communication with the means of vaporization

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- f) electronics associated with the hair styling device; and
  - g) a styling composition, contained within a reservoir, comprising a nonvolatile active and wherein the styling composition further comprises a volatile carrier; further wherein the hair styling device will deliver a styling composition comprising a nonvolatile active delivered as droplets having a  $D_v(90)$  of less than about 30 microns.
23. (original) A hair styling device according to Claim 22 wherein the nonvolatile actives are miscible/soluble in the carrier.
24. (original) A hair styling device according to Claim 22 wherein the carrier is selected from the group consisting of water, organic solvents, hydrophobic solvents and mixtures thereof.
25. (original) A hair styling device according to Claim 24 wherein the carrier is water.
26. (original) A hair styling device according to Claim 22 wherein the nonvolatile active is selected from the group consisting of polyalkylene glycols, polyethylene/polypropylene glycol copolymers, alkoxy polyethylene glycols, polyalkylene glyceryl ethers, polyalkylene glycol ethers of fatty acids, polyalkylene glycol ether of aliphatic alcohols, polyalkylene glyceryl ester of fatty acids, polyalkylene glyceryl ether of aliphatic alcohols, glyceryl alkylates, glyceryl alkyl ethers, glycol alkylate, polyglycerols, polyglycerol esters, soluble/dispersible nonvolatile silicone copolyols, polydimethicone copolyol and mixtures thereof.
27. (original) A hair styling device according to Claim 26 wherein the nonvolatile active is a polyalkylene glycol having a number average molecular weight of from about 190 to about 1500 and from about 5 to about 35 repeating alkylene oxide

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radicals wherein each of the repeating alkylene oxide radicals has from about 2 to about 6 carbon atoms.

28. (original) A hair styling device according to Claim 27 wherein the polyalkylene glycol is selected from the group consisting of ethoxy polyethylene/polypropylene glycol copolymers, methoxy polyethylene/polypropylene glycol copolymers, propoxy polyethylene/polypropylene glycol copolymers, butoxy polyethylene/polypropylene glycol copolymers, pentoxy polyethylene/polypropylene glycol copolymers, triglycerin, hexaglycerin, PPG-4, PPG-6, PEG-5, PEG-6, PEG-8, PEG-12, PEG-14, PEG-18, PEG-20, PEG-32, and mixtures thereof.
29. (original) A hair styling device according to Claim 28 wherein the polyethylene glycol has a number average molecular weight of from about 400 to about 1000.
30. (original) A hair styling device according to Claim 22 wherein the means to transport a styling active from the reservoir to the heating chamber is a felt.
31. (original) A hair styling device according to Claim 30 wherein the felt is any porous material capable of wicking a compositions.
32. (original) A hair styling device according to Claim 22 wherein the felt has a contact area of about 10 to about 4000 mm<sup>2</sup> with the heating means.
33. (original) A hair styling device according to Claim 32 wherein the felt is comprised of a coarse filter
34. (original) A hair styling device according to Claim 22 wherein the reservoir is further comprised of a valve that opens when a vacuum between about 2 to about 10 mmHg.

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35. (original) A hair styling device according to Claim 22 wherein a delivery rate from the heating chamber is about 0.1 g/min to about 4 grams per minute.
36. (original) A hair styling device according to Claim 22 wherein the heating chamber has multiple row of holes for dispensing the styling composition.
37. (original) A hair styling device according to Claim 22 wherein the heating means is heated to a temperature range of 90°C to about 210 °C.
38. (original) A hair styling device according to Claim 22 wherein the device has a second reservoir.
39. (original) A hair styling device according to Claim 38 wherein the second reservoir comprises water.
40. (original) A hair styling device according to Claim 22 wherein the reservoir is capable of delivering the styling active when the device is orientated in any direction.
41. (withdrawn) A composition of matter for use in a hair care operation, comprising a non-volatile compound and a carrier, the composition being releasably held within a reservoir, the reservoir comprising fluid-impermeable walls, the walls having an attachment means associated therewith for removably attaching the reservoir to a hair styling device, wherein the reservoir is in fluid communication with the hair styling device according to Claims 1, 2 or 4.
42. (withdrawn) A composition of matter for use in a hair care operation according to Claim 41 wherein the reservoir is re-fillable.

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43. (withdrawn) A composition of matter for use in a hair care operation according to Claim 41 wherein the reservoir is non-refillable.
44. (original) A method for straightening hair strands on a scalp regions wherein hair to be straightened is passed under tension between a gripping means, wherein the gripping means provides a heating means, and a styling active comprising nonvolatile compounds, wherein the styling active is delivered as droplets having a Dv(90) of less than about 30 microns.
45. (original) A method according to Claim 44 wherein the gripping means further provides about 0.02 to about 4 grams per minute of water.
46. (original) A method according to Claim 44 wherein the gripping means is comprised of jaws of a gripping device.
47. (original) A method according to Claim 46 wherein the jaws are hingedly connected to provide a unitary gripping device.
48. (original) A method according to Claim 44 wherein the gripping device is comprised of a reservoir for containing the styling active.
49. (original) A method according to Claim 48 wherein the reservoir is in communication with a means for delivery of the styling active to the hair.
50. (original) A method according to Claim 49 further wherein a means of transport connects the reservoir and the means of delivery of the styling active to the hair.
51. (original) A method according to Claim 50 wherein the means of transport is a felt.

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52. (original) A method according to Claim 44 wherein the styling active further comprises a carrier.
53. (original) A method according to Claim 52 wherein the styling active is miscible/dispersible in a carrier.
54. (original) A method according to Claim 534 wherein the means of delivery of the styling active to the hair further comprises a means for vaporizing the styling composition resulting in a droplet size having a Dv(90) of less than about 30 microns.
55. (original) A method according to Claims 44 or 54 wherein the nonvolatile compounds remain on the hair as a liquid or a semisolid after the styling active has been delivered to the hair.
56. (original) A method for straightening hair strands on a user's scalp region comprising, in the presence of heat and a nonvolatile styling active delivered as droplets having a Dv(90) of less than about 30 microns:
- a) gripping the hair strands between the gripping means of the hair styling device of Claim 1;
  - b) placing the hair strands under tension by drawing the device along the strands in a direction away from the scalp region;
  - c) releasing the hair strands and optionally repeating steps (a) and (b).